

What Is Claimed Is:

1. A method for synthesizing one or more cDNA molecules or population of cDNA molecules comprising:

5 mixing at least one mRNA or poly A RNA template or population of such templates with at least one polypeptide having reverse transcriptase activity; and

incubating said mixture under conditions sufficient to increase the amount or percentage of full-length cDNA molecules synthesized.

10 2. The method of claim 1, wherein said conditions reduce or substantially reduce internal priming.

15 3. The method of claim 1, wherein said polypeptide is a reverse transcriptase selected from the group consisting of M-MLV RT, RSV RT, AMV RT, RAV RT, MAV RT, and HIV RT, and derivatives, fragments, mutations and variants thereof.

20 4. The method of claim 3, wherein said reverse transcriptase is reduced or substantially reduced in RNase H activity.

25 5. The method of claim 2, wherein said conditions comprise annealing or hybridizing one or more primers to said templates at elevated temperatures.

6. The method of claim 5, wherein said elevated temperature ranges from about 20°C to about 90°C.

30 7. The method of claim 2, wherein said conditions comprise lowering the amount of primer relative to the amount of said template.

8. The method of claim 7, wherein the ratio of said primer to said template ranges from about 5:1 to about 1:20.

9. The method of claim 1, wherein said conditions comprise the use of an inhibitor of the polypeptide having reverse transcriptase activity.

10. The method of claim 9, wherein said inhibitor is an antibody or antibody fragment.

11. The method of claim 10, wherein said antibody or antibody fragment is polyclonal or monoclonal.

12. The method of claim 2, wherein said conditions comprise the use of a primer having a high specificity.

13. The method of claim 2, wherein said conditions comprise increasing the length of said primer.

14. The method of claim 13, wherein the length of said primer which hybridizes to said template ranges from about 20 bases to about 60 bases.

15. The method of claim 1, wherein said method further comprises incubating at least one of said cDNA molecules under conditions sufficient to make at least one second nucleic acid molecule complementary to all or a portion of said at least one cDNA molecule, thereby producing one or more double stranded cDNA molecules.

16. The method of claim 15, wherein said conditions for making said second nucleic acid molecule increases the amount or percentage of full-length double stranded cDNA molecules.

5 17. The method of claim 16, wherein said conditions comprise optimizing ribonuclease digestion.

10 18. The method of claim 17, wherein said conditions allow digestion of single stranded mRNA contained in mRNA/cDNA hybrids formed after first strand cDNA synthesis.

15 19. The method of claim 18, wherein said conditions prevent, inhibit, reduce or substantially reduce digestion of mRNA in the double stranded mRNA/cDNA hybrid.

20 20. The method of claim 17, wherein said ribonuclease is selected from the group consisting of RNase A and RNase I, or combinations thereof.

25 21. A cDNA molecule or population of cDNA molecules made according to the method of claim 1.

22. A cDNA molecule or population of cDNA molecules made according to the method of claim 15.

25 23. A vector comprising the nucleic acid molecule of claim 21.

24. A vector comprising the nucleic acid molecule of claim 22.

30 25. A host cell comprising the vector of claim 23.

26. A host cell comprising the vector of claim 24.

27. A host cell comprising the molecule of claim 21.

28. A host cell comprising the molecule of claim 22.

29. A kit for making an increased amount or percentage of full-length cDNA comprising at least one component selected from the group consisting of one or more primers, one or more reverse transcription inhibitors, one or more reverse transcription enzymes, one or more nucleotides, one or more cap binding molecules, one or more reverse transcription buffers and instructions for making full-length cDNA.

30. A composition for making an increased amount or percentage of full-length cDNA.

31. An antibody or fragment thereof which specifically binds to a polypeptide having reverse transcriptase activity.

32. An antibody or fragment thereof which specifically binds to a mRNA cap structure.

add
A1

add
B2